

### **REMARKS**

The Office Action dated August 24, 2006, has been received and carefully noted. The following remarks are submitted as a full and complete response thereto.

By this Amendment, claims 1-14 have been amended. No new matter has been added. Support for the amendments to the claims can be found on at least page 1, line 9 of the specification as originally filed. Claims 1-23 are pending and respectfully submitted for consideration.

### **Rejections Under 35 U.S.C. § 103**

Claims 1-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent Publication No. 2002-212672 (JP '672) in view of Japanese Patent Publication No. 2002-348615 (JP '615) or Japanese Patent Publication No. 63-195257 (JP '257). Claims 2-12 depend from claim 1 and claims 14-22 depend from claim 13. The Office Action took the position that JP '672 disclosed many of the claimed elements of the invention with the exception of vacuum carburizing. JP '615 and JP '257 were cited for curing this deficiency. The Applicants traverse the rejection and respectfully submit that claims 1-23 recite subject matter that is neither disclosed nor suggested by the cited references.

As a result of the claimed invention, the part having the treatment of the present invention avoids the need for adding an expensive element such as Mo and Ni. High concentration carburizing is conducted to cause carbides to separate out on the surface of gear or the like in a slight amount, enhancing the surface hardness and strength. Vacuum carburizing is conducted to substantially eliminate the grain boundary oxide

layer on the surface. The Applicants respectfully submit that the cited references fail to disclose or suggest the features at least the features of high-concentration carburizing and the non-use of Mo and Ni and thereby fail to provide the critical and non-obvious advantages of the present invention.

JP '672 discloses a core part of a steel member having chemical components containing, by mass, 0.10 to 0.30% C, 0.15 to 1.0% Si, 0.20 to 1.0% Mn, 1.0 to 2.0% Cr and 0.05 to 0.6% Mo. The surface density of carbides having a diameter of  $\leq 0.5 \mu\text{m}$  in the surface layer part within  $50 \mu\text{m}$  from the surface is  $\geq 6.0$  pieces/ $10 \mu\text{m}^2$ . The ratio of the number of the carbides with a diameter of  $\leq 0.5 \mu\text{m}$  occupied in the total number of carbides is  $\geq 80\%$ . See the English language Abstract of JP '672.

JP '615 discloses a method for manufacturing a high bearing pressure resistant member. The method comprises vacuum carburizing steel for a machine structure. See the English language Abstract of JP '615.

JP '257 discloses improving strength, impact value and fatigue strength by subjecting a steel material with the specific ratios of C, Si, Mn, P, S, Al, N, etc., to a vacuum carburization and thereafter applying it to working and quenching in a hot area. See the English language Abstract of JP '257.

Claims 1 and 13, as amended, recite a geared power transmission part, and claim 23 recites a gear for use in a power transmission. The Office Action took the position that JP '672 discloses a steel part for a machine structure which would broadly include a gear. See page 3, paragraph 8 of the Office Action. However, the Applicants respectfully submit that neither the English language Abstract nor the figures of JP '672 disclose a gear. In addition, there is no disclosure or suggestion in the English

language of Abstract of JP '672 of a gear having a core comprising an interior region which cannot be carburized as recited in claims 1 and 23. Further, claim 13 recites a C content on a surface of said alloy is from 1.0 to 1.5%. There is no disclosure or suggestion in JP '672 of the C content on the surface of the steel member.

JP '615 and JP '257 fail to cure the deficiencies in JP '672 as JP '615 and JP '257 also do not disclose a geared power transmission part. Further, JP '257 does not disclose or suggest a C content on the surface, and JP '615 discloses a surface C quantity after the treatment to be 0.5-0.7%. As such, the Applicants respectfully submit that JP '672 in combination with either JP '615 or JP '257 fails to disclose or suggest at least the feature of a geared power transmission part or gear as recited in claims 1, 13 and 23.

Claims 1-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent Publication 2000-087213 (JP '213) in view of JP '672, JP '615 and JP '257. Claims 2-12 depend from claim 1 and claims 14-22 depend from claim 13. The Office Action took the position that JP '213 discloses many of the claimed elements of the invention with the exception of vacuum carburizing. JP '615 and JP '257 were cited for curing this deficiency.

As a preliminary matter, the Applicants note that the citation of JP '672 does not appear to be proper in this rejection of claims 1-23. It was not clear how JP '672 was being applied to JP '213. The Applicants telephoned the Examiner to request clarification. The Examiner indicated that the indication of JP '672 was in error and that the citations should read "JP '213" As such, the Applicants address the rejection of claims 1-23 over JP '213 in view of JP '615 and JP '257.

JP '213 discloses that a rolling part is obtained by performing a stock composed of steel containing by weight, 0.15 to 0.45% C, 1.2 to 1.6% Cr, 0.35 to 0.55% Si, 0.35 to 0.65% Mn and the balance Fe with inevitable impurities to heat treatment including carburizing treatment.

The Applicants respectfully submit that the combination of JP '213, JP 615 and JP '257 fail to disclose or suggest the features of the invention as recited in claims 1, 13 and 23. Claims 1 and 13, as amended, recite a geared power transmission part and claim 23 recites a gear. In contrast, JP '213 discloses a bearing (rolling part). As such, JP '213 does not disclose at least a geared power transmission part, or gear as recited in claims 1, 13 and 23. JP '615 and JP '257 fail to cure the deficiencies in JP '213 as the references also do not disclose or suggest a geared power transmission part. Therefore, the combination of combination of JP '213, JP 615 and JP '257 fails to disclose or suggest at least the feature of a geared power transmission part or gear as recited in claims 1, 13 and 23.

Under U.S. patent practice, the PTO has the burden under §103 to establish a *prima facie* case of obviousness. In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Both the case law of the Federal Circuit and the PTO itself have made clear that where a modification must be made to the prior art to reject or invalidate a claim under §103, there must be a showing of proper motivation to do so. The mere fact that a prior art reference could arguably be modified to meet the claim is insufficient to establish obviousness. The PTO can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.

Id. In order to establish obviousness, there must be a suggestion or motivation in the reference to do so. See also In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (prior art could not be turned upside down without motivation to do so); In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998); In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999); In re Lee, 277 F.3d 1338 (Fed. Cir. 2002). The Office Action restates the advantages of the present invention to justify the combination of references. There is, however, nothing in the applied references to evidence the desirability of these advantages in the disclosed structure.

In view of the above, the Applicants respectfully submit that the Office Action has failed to establish a *prima facie* case of obviousness for purposes of a rejection of claims 1, 13 and 23 under 35 U.S.C. §103.

### **Conclusion**

The Applicants respectfully submit that claims 1, 13 and 23 are allowable. Claims 2-12 depend from claim 1 and claims 14-22 depend from claim 13. The Applicants respectfully submit that these dependent claims incorporate the patentable aspects thereof, and are therefore allowable for at least the same reasons. Accordingly, the Applicants respectfully request withdrawal of the rejections, allowance of claims 1-23 and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing Attorney Dkt. No. 107355-00111.**

Respectfully submitted,



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Enclosure: Petition for Extension of Time

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